

SEQUENCE LISTING

<110> Yan et al.

<120> SUBSTRATES AND ASSAYS FOR BETA-SECRETASE ACTIVITY

<130> 29915/00281C

<140> To be assigned

<141> 2004-03-16

<150> 09/908,943

<151> 2001-07-19

<150> 60/219,795

<151> 2000-07-19

<160> 197

<170> PatentIn Ver. 2.0

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 Asp Asn Leu Arg Gly Lys Ser Gly Gln Gly Tyr Tyr Val Glu Met Thr
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 Val Gly Ser Pro Pro Gln Thr Leu Asn Ile Leu Val Asp Thr Gly Ser
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Val Gly Ser Gly Val Leu Leu
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<210> 40

<211> 5

<212> PRT

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<220>

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<400> 40

Val Gly Ser Gly Val
1 5

<210> 41

<211> 12

<212> PRT

<213> Artificial Sequence

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<400> 41

Lys Val Glu Ala Leu Tyr Leu Val Xaa Gly Glu Arg
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<210> 42

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

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<400> 42

Trp Arg Arg Val Glu Ala Leu Tyr Leu Val Glu Gly Glu Arg Lys
1 5 10 15

<210> 43

<211> 14

<212> PRT

<213> Artificial Sequence

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Lys Val Glu Ala Asn Tyr Leu Val Glu Gly Glu Arg Lys Lys
1 5 10

<210> 44
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<220>
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Met Leu Leu Leu
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<210> 45
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<220>
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<400> 45
Asp Ala Ala His Pro Gly
1 5

<210> 46
<211> 14
<212> PRT
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<220>
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<400> 46
Lys Val Glu Ala Asn Tyr Asp Val Glu Gly Glu Arg Lys Lys
1 5 10

<210> 47
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<220>
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<400> 47
Lys Val Glu Ala Asn Leu Ala Val Glu Gly Glu Arg Lys Lys
1 5 10

<210> 48
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<212> PRT
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<220>
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<400> 48
Lys Val Glu Ala Leu Tyr Ala Val Glu Gly Glu Arg Lys Lys
1 5 10

<210> 49
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<400> 49
Xaa Ala Asn Tyr Glu Val Glu Phe
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<210> 50
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<400> 50
Glu Xaa Asn Tyr Glu Val Glu Phe
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<210> 51
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peptide sequence

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<400> 51
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<210> 52
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<400> 52
Glu Ala Asn Xaa Glu Val Glu Phe
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<210> 53
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<400> 53
Glu Ala Asn Tyr Xaa Val Glu Phe
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<210> 54
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<210> 55

<211> 8
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<400> 55
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<210> 56
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<400> 56
Glu Ala Asn Tyr Glu Val Glu Xaa
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<210> 57
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<400> 57
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<210> 58
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<223> Xaa= A, V, I, S, H, Y, T or F

<400> 58
Gly Xaa Leu Leu Ala Ala Gly Trp
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<210> 59
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<400> 59
Gly Val Xaa Leu Ala Ala Gly Trp
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<210> 60
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<400> 60
Gly Val Leu Xaa Ala Ala Gly Trp
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<210> 61
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<400> 61
Gly Val Leu Leu Xaa Ala Gly Trp
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<400> 62
Gly Val Leu Leu Ala Xaa Gly Trp
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<210> 63
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<400> 63
Gly Val Leu Leu Ala Ala Xaa Trp
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<210> 64
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<400> 64
Gly Val Leu Leu Ala Ala Gly Xaa
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<210> 65

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<400> 65
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<210> 66
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<400> 66
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<210> 67
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<400> 67
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<210> 68
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<210> 69
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<400> 71

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<210> 72

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<400> 72

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1 5

<210> 73

<211> 10

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Xaa Ser Ser Asn Leu Glu Met Thr His Ala
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<210> 74

<211> 10

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<210> 77
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Asp Ser Ser Asn Leu Glu Xaa Thr His Ala
1 5 10

<210> 78
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Thr Xaa Gly Phe Gln Leu Xaa His

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<210> 83

<211> 8

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Thr His Xaa Phe Gln Leu Xaa His

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<210> 84

<211> 8

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Thr His Gly Xaa Gln Leu Xaa His
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1 5

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<210> 90
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<400> 91
Xaa Tyr Xaa His Ser Phe Ser Pro
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Xaa Tyr Thr Xaa Ser Phe Ser Pro
1 5

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Xaa Tyr Thr His Ser Phe Xaa Pro
1 5

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Xaa Thr Asp Xaa Gly Ser Xaa Gly
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peptide sequence

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Ser Xaa Asp Xaa Gly Ser Xaa Gly
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peptide sequence

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Ser Thr Xaa Xaa Gly Ser Xaa Gly
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peptide sequence

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<222> (5)

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Ser Thr Asp Xaa Xaa Ser Xaa Gly
1 5

<210> 102

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<222> (6)

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<222> (7)

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<210> 104

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<211> 8
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<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<220>
<221> SITE
<222> (1)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (2)
<223> Xaa= A, V, I, S, H, Y, T or F

<220>
<221> SITE
<222> (4)..(7)
<223> Xaa= any amino acid

<400> 106
Xaa Xaa Ala Xaa Xaa Xaa Xaa Asn
1 5

<210> 107
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<220>
<221> SITE
<222> (1)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (3)
<223> Xaa= N, L, K, S, G, T, D, A, Q or E

<220>
<221> SITE
<222> (4)..(7)
<223> Xaa= any amino acid

<400> 107
Xaa Phe Xaa Xaa Xaa Xaa Xaa Asn
1 5

<210> 108
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<220>
<221> SITE
<222> (1)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (4)
<223> Xaa= Y, L, M, Nle, F or H

<220>
<221> SITE
<222> (5)..(7)
<223> Xaa= any amino acid

<400> 108
Xaa Phe Ala Xaa Xaa Xaa Xaa Asn
1 5

<210> 109
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<220>
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<222> (1)
<223> Xaa= any amino acid

<220>
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<222> (4)
<223> Xaa = any amino acid

<220>
<221> SITE
<222> (5)
<223> Xaa= E, A, D, M, Q, S or G

<220>
<221> SITE
<222> (6)..(7)
<223> Xaa= any amino acid

<400> 109
Xaa Phe Ala Xaa Xaa Xaa Xaa Asn
1 5

<210> 110
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<220>
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<222> (1)
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<220>
<221> SITE
<222> (4)..(5)
<223> Xaa= any amino acid

<220>
<221> SITE
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<223> Xaa= V, A, N, T, L, F or S

<220>
<221> SITE
<222> (7)
<223> Xaa= any amino acid

<400> 110
Xaa Phe Ala Xaa Xaa Xaa Xaa Asn
1 5

<210> 111
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<220>
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<223> Xaa= any amino acid

<220>
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<222> (4)..(6)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (7)
<223> Xaa= E, G, F, H, cysteic acid or S

<400> 111
Xaa Phe Ala Xaa Xaa Xaa Xaa Asn
1 5

<210> 112
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<220>
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<222> (1)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (4)..(7)
<223> Xaa= any amino acid

<220>
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<222> (8)
<223> Xaa= F, W, G, A, H, P, G, N or S

<400> 112
Xaa Phe Ala Xaa Xaa Xaa Xaa Xaa
1 5

<210> 113
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 113
Glu Val Asn Leu Asp Ala Glu Phe Arg
1 5

<210> 114
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 114
Asp Tyr Lys Asp Asp Asp Lys
1 5

<210> 115
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 115
Ala Cys Gly Ser Glu Ser Met Asp Ser Gly Ile Ser Leu Asp Asn Lys
1 5 10 15

Trp

<210> 116
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 116
Trp Lys Lys Gly Ala Ile Ile Gly Leu Met Val Gly Gly Val Val Lys
1 5 10 15

Lys

<210> 117

<211> 11
<212> PRT
<213> Artificial Sequence

<220>
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peptide sequence

<400> 117
Ala Asn Leu Ser Thr Phe Ala Gln Pro Arg Arg
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<210> 118
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 118
Tyr Arg Tyr Gln Ser His Asp Tyr Ala Phe Ser Ser Val Glu Lys Leu
1 5 10 15
Leu His Leu Gly Gly Cys
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<210> 119
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 119
Tyr Arg Tyr Gln Ser His Asp Tyr Ala Phe Ser Ser Val Glu Lys Leu
1 5 10 15
Leu His Leu Gly Gly Cys
20

<210> 120
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
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peptide sequence

<400> 120
Lys Thr Ile Thr Leu Glu Val Glu Pro Ser
1 5 10

<210> 121
<211> 12

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<220>
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<222> (9)
<223> Xaa= cysteic acid

<400> 121
Val Glu Ala Leu Tyr Leu Val Cys Xaa Gly Glu Arg
1 5 10

<210> 122
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 122
Val Glu Ala Leu Tyr Leu Val Glu Gly Glu Arg
1 5 10

<210> 123
<211> 363
<212> PRT
<213> Homo sapiens

<220>
<223> galactosyltransferase

<400> 123
Met Ala Ser Lys Ser Trp Leu Asn Phe Leu Thr Phe Leu Cys Gly Ser
1 5 10 15
Ala Ile Gly Phe Leu Leu Cys Ser Gln Leu Phe Ser Ile Leu Leu Gly
20 25 30
Glu Lys Val Asp Thr Gln Pro Asn Val Leu His Asn Asp Pro His Ala
35 40 45
Arg His Ser Asp Asp Asn Gly Gln Asn His Leu Glu Gly Gln Met Asn
50 55 60
Phe Asn Ala Asp Ser Ser Gln His Lys Asp Glu Asn Thr Asp Ile Ala
65 70 75 80
Glu Asn Leu Tyr Gln Lys Val Arg Ile Leu Cys Trp Val Met Thr Gly
85 90 95
Pro Gln Asn Leu Glu Lys Lys Ala Lys His Val Lys Ala Thr Trp Ala
100 105 110
Gln Arg Cys Asn Lys Val Leu Phe Met Ser Ser Glu Glu Asn Lys Asp
115 120 125

Phe Pro Ala Val Gly Leu Lys Thr Lys Glu Gly Arg Asp Gln Leu Tyr
 130 135 140
 Trp Lys Thr Ile Lys Ala Phe Gln Tyr Val His Glu His Tyr Leu Glu
 145 150 155 160
 Asp Ala Asp Trp Phe Leu Lys Ala Asp Asp Thr Tyr Val Ile Leu
 165 170 175
 Asp Asn Leu Arg Trp Leu Leu Ser Lys Tyr Asp Pro Glu Glu Pro Ile
 180 185 190
 Tyr Phe Gly Arg Arg Phe Lys Pro Tyr Val Lys Gln Gly Tyr Met Ser
 195 200 205
 Gly Gly Ala Gly Tyr Val Leu Ser Lys Glu Ala Leu Lys Arg Phe Val
 210 215 220
 Asp Ala Phe Lys Thr Asp Lys Cys Thr His Ser Ser Ser Ile Glu Asp
 225 230 235 240
 Leu Ala Leu Gly Arg Cys Met Glu Ile Met Asn Val Glu Ala Gly Asp
 245 250 255
 Ser Arg Asp Thr Ile Gly Lys Glu Thr Phe His Pro Phe Val Pro Glu
 260 265 270
 His His Leu Ile Lys Gly Tyr Leu Pro Arg Thr Phe Trp Tyr Trp Asn
 275 280 285
 Tyr Asn Tyr Tyr Pro Pro Val Glu Gly Pro Gly Cys Cys Ser Asp Leu
 290 295 300
 Ala Val Ser Phe His Tyr Val Asp Ser Thr Thr Met Tyr Glu Leu Glu
 305 310 315 320
 Tyr Leu Val Tyr His Leu Arg Pro Tyr Gly Tyr Leu Tyr Arg Tyr Gln
 325 330 335
 Pro Thr Leu Pro Glu Arg Ile Leu Lys Glu Ile Ser Gln Ala Asn Lys
 340 345 350
 Asn Glu Asp Thr Lys Val Lys Leu Gly Asn Pro
 355 360

<210> 124

<211> 405

<212> PRT

<213> Homo sapiens

<220>

<223> Homo sapiens sialyltransferase 1

<400> 124

Ile His Thr Asn Leu Lys Lys Lys Phe Ser Cys Cys Val Leu Val Phe
 1 5 10 15

Leu Leu Phe Ala Val Ile Cys Val Trp Lys Glu Lys Lys Lys Gly Ser
 20 25 30

Tyr Tyr Asp Ser Phe Lys Leu Gln Thr Lys Glu Phe Gln Val Leu Lys

35					40					45					
Ser	Leu	Gly	Lys	Leu	Ala	Met	Gly	Ser	Asp	Ser	Gln	Ser	Val	Ser	Ser
	50					55					60				
Ser	Ser	Thr	Gln	Asp	Pro	His	Arg	Gly	Arg	Gln	Thr	Leu	Gly	Ser	Leu
65					70					75					80
Arg	Gly	Leu	Ala	Lys	Ala	Lys	Pro	Glu	Ala	Ser	Phe	Gln	Val	Trp	Asn
				85					90					95	
Lys	Asp	Ser	Ser	Ser	Lys	Asn	Leu	Ile	Pro	Arg	Leu	Gln	Lys	Ile	Trp
			100					105					110		
Lys	Asn	Tyr	Leu	Ser	Met	Asn	Lys	Tyr	Lys	Val	Ser	Tyr	Lys	Gly	Pro
		115					120					125			
Gly	Pro	Gly	Ile	Lys	Phe	Ser	Ala	Glu	Ala	Leu	Arg	Cys	His	Leu	Arg
	130					135					140				
Asp	His	Val	Asn	Val	Ser	Met	Val	Glu	Val	Thr	Asp	Phe	Pro	Phe	Asn
145						150					155				160
Thr	Ser	Glu	Trp	Glu	Gly	Tyr	Leu	Pro	Lys	Glu	Ser	Ile	Arg	Thr	Lys
				165					170					175	
Ala	Gly	Pro	Trp	Gly	Arg	Cys	Ala	Val	Val	Ser	Ser	Ala	Gly	Ser	Leu
			180					185					190		
Lys	Ser	Ser	Gln	Leu	Gly	Arg	Glu	Ile	Asp	Asp	His	Asp	Ala	Val	Leu
		195					200					205			
Arg	Phe	Asn	Gly	Ala	Pro	Thr	Ala	Asn	Phe	Gln	Gln	Asp	Val	Gly	Thr
	210					215						220			
Lys	Thr	Thr	Ile	Arg	Leu	Met	Asn	Ser	Gln	Leu	Val	Thr	Thr	Glu	Lys
225					230					235					240
Arg	Phe	Leu	Lys	Asp	Ser	Leu	Tyr	Asn	Glu	Gly	Ile	Leu	Ile	Val	Trp
				245					250					255	
Asp	Pro	Ser	Val	Tyr	His	Ser	Asp	Ile	Pro	Lys	Trp	Tyr	Gln	Asn	Pro
			260					265					270		
Asp	Tyr	Asn	Phe	Phe	Asn	Asn	Tyr	Lys	Thr	Tyr	Arg	Lys	Leu	His	Pro
		275					280					285			
Asn	Gln	Pro	Phe	Tyr	Ile	Leu	Lys	Pro	Gln	Met	Pro	Trp	Glu	Leu	Trp
	290					295					300				
Asp	Ile	Leu	Gln	Glu	Ile	Ser	Pro	Glu	Glu	Ile	Gln	Pro	Asn	Pro	Pro
305						310					315				320
Ser	Ser	Gly	Met	Leu	Gly	Ile	Ile	Ile	Met	Met	Thr	Leu	Cys	Asp	Gln
				325					330					335	
Val	Asp	Ile	Tyr	Glu	Phe	Leu	Pro	Ser	Lys	Arg	Lys	Thr	Asp	Val	Cys
			340					345					350		
Tyr	Tyr	Tyr	Gln	Lys	Phe	Phe	Asp	Ser	Ala	Cys	Thr	Met	Gly	Ala	Tyr
		355					360					365			
His	Pro	Leu	Leu	Tyr	Glu	Lys	Asn	Leu	Val	Lys	His	Leu	Asn	Gln	Gly

370		375		380
Thr Asp Glu Asp Ile Tyr Leu Leu Gly Lys Ala Thr Leu Pro Gly Phe				
385		390	395	400
Arg Thr Ile His Cys				
		405		
<210> 125				
<211> 518				
<212> PRT				
<213> Homo sapiens				
<220>				
<223> Homo sapiens aspartyl protease 1				
<400> 125				
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Leu Leu Arg Ala Ala Pro Glu Leu Ala Pro Ala Pro Phe Thr Leu Pro				
	20		25	30
Leu Arg Val Ala Ala Ala Thr Asn Arg Val Val Ala Pro Thr Pro Gly				
	35	40		45
Pro Gly Thr Pro Ala Glu Arg His Ala Asp Gly Leu Ala Leu Ala Leu				
	50	55	60	
Glu Pro Ala Leu Ala Ser Pro Ala Gly Ala Ala Asn Phe Leu Ala Met				
	65	70	75	80
Val Asp Asn Leu Gln Gly Asp Ser Gly Arg Gly Tyr Tyr Leu Glu Met				
	85	90		95
Leu Ile Gly Thr Pro Pro Gln Lys Leu Gln Ile Leu Val Asp Thr Gly				
	100	105		110
Ser Ser Asn Phe Ala Val Ala Gly Thr Pro His Ser Tyr Ile Asp Thr				
	115	120	125	
Tyr Phe Asp Thr Glu Arg Ser Ser Thr Tyr Arg Ser Lys Gly Phe Asp				
	130	135	140	
Val Thr Val Lys Tyr Thr Gln Gly Ser Trp Thr Gly Phe Val Gly Glu				
	145	150	155	160
Asp Leu Val Thr Ile Pro Lys Gly Phe Asn Thr Ser Phe Leu Val Asn				
	165	170		175
Ile Ala Thr Ile Phe Glu Ser Glu Asn Phe Phe Leu Pro Gly Ile Lys				
	180	185		190
Trp Asn Gly Ile Leu Gly Leu Ala Tyr Ala Thr Leu Ala Lys Pro Ser				
	195	200	205	
Ser Ser Leu Glu Thr Phe Phe Asp Ser Leu Val Thr Gln Ala Asn Ile				
	210	215	220	
Pro Asn Val Phe Ser Met Gln Met Cys Gly Ala Gly Leu Pro Val Ala				
	225	230	235	240

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<210> 126

<211> 255

<212> PRT

<213> Homo sapiens

<220>

<223> Homo sapiens syntaxin 6

<400> 126

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Met Ser Met Glu Asp Pro Phe Phe Val Val Lys Gly Glu Val Gln Lys
 1           5           10           15

Ala Val Asn Thr Ala Gln Gly Leu Phe Gln Arg Trp Thr Glu Leu Leu
          20           25           30

Gln Asp Pro Ser Thr Ala Thr Arg Glu Glu Ile Asp Trp Thr Thr Asn
          35           40           45

Glu Leu Arg Asn Asn Leu Arg Ser Ile Glu Trp Asp Leu Glu Asp Leu
          50           55           60

Asp Glu Thr Ile Ser Ile Val Glu Ala Asn Pro Arg Lys Phe Asn Leu
          65           70           75           80

Asp Ala Thr Glu Leu Ser Ile Arg Lys Ala Phe Ile Thr Ser Thr Arg
          85           90           95

Gln Val Val Arg Asp Met Lys Asp Gln Met Ser Thr Ser Ser Val Gln
          100          105          110

Ala Leu Ala Glu Arg Lys Asn Arg Gln Ala Leu Leu Gly Asp Ser Gly
          115          120          125

Ser Gln Asn Trp Ser Thr Gly Thr Thr Asp Lys Tyr Gly Arg Leu Asp
          130          135          140

Arg Glu Leu Gln Arg Ala Asn Ser His Phe Ile Glu Glu Gln Gln Ala
          145          150          155          160

Gln Gln Gln Leu Ile Val Glu Gln Gln Asp Glu Gln Leu Glu Leu Val
          165          170          175

Ser Gly Ser Ile Gly Val Leu Lys Asn Met Ser Gln Arg Ile Gly Gly
          180          185          190

Glu Leu Glu Glu Gln Ala Val Met Leu Glu Asp Phe Ser His Glu Leu
          195          200          205

Glu Ser Thr Gln Ser Arg Leu Asp Asn Val Met Lys Lys Leu Ala Lys
          210          215          220

Val Ser His Met Thr Ser Asp Arg Arg Gln Trp Cys Ala Ile Ala Ile
          225          230          235          240

Leu Phe Ala Val Leu Leu Val Val Leu Ile Leu Phe Leu Val Leu
          245          250          255

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<210> 127

<211> 1728

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: nucleic acid
encoding recombinant fusion protein

<400> 127

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gttgaggagg agaaccgga cttctggaac cgcgaggcag ccgaggccct gggcgccgcc 120
aagaagctgc agcctgcaca gacagccgcc aagaacctca tcatttctt gggcgatggg 180

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atgggggtgt ctacggtgac agctgccagg atcctaaaag ggcagaagaa ggacaaactg 240
gggcctgaga taccctggc catggaccgc tcccataatg tggctctgtc caagacatac 300
aatgtagaca aacatgtgcc agacagtgga gccacagcca cggcctacct gtgcgggggtc 360
aagggaact tccagaccat tggcttgagt gcagccgccc gctttaacca gtgcaacacg 420
acacgcggca acgaggtcat ctccgtgatg aatcgggcca agaaagcagg gaagtcagtg 480
ggagtggtaa ccaccacacg agtgcagcac gcctcgccag ccggcaccta cgcccacacg 540
gtgaaccgca actggtactc ggacgccgac gtgcctgcct cggcccgcga ggaggggtgc 600
caggacatcg ctacgcagct catctccaac atggacattg acgtgatcct aggtggaggc 660
cgaaagtaca tgtttcccat gggaacccca gacctgagt acccagatga ctacagccaa 720
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<210> 128

<211> 575

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: recombinant fusion protein sequence

<400> 128

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Gly Ile Ile Pro Val Glu Glu Glu Asn Pro Asp Phe Trp Asn Arg Glu
          20                      25                      30

Ala Ala Glu Ala Leu Gly Ala Ala Lys Lys Leu Gln Pro Ala Gln Thr
          35                      40                      45

Ala Ala Lys Asn Leu Ile Ile Phe Leu Gly Asp Gly Met Gly Val Ser
          50                      55                      60

Thr Val Thr Ala Ala Arg Ile Leu Lys Gly Gln Lys Lys Asp Lys Leu
          65                      70                      75                      80

Gly Pro Glu Ile Pro Leu Ala Met Asp Arg Phe Pro Tyr Val Ala Leu
          85                      90                      95

Ser Lys Thr Tyr Asn Val Asp Lys His Val Pro Asp Ser Gly Ala Thr
          100                     105                     110

Ala Thr Ala Tyr Leu Cys Gly Val Lys Gly Asn Phe Gln Thr Ile Gly
          115                     120                     125

Leu Ser Ala Ala Ala Arg Phe Asn Gln Cys Asn Thr Thr Arg Gly Asn
          130                     135                     140
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Glu Val Ile Ser Val Met Asn Arg Ala Lys Lys Ala Gly Lys Ser Val
145          150          155          160

Gly Val Val Thr Thr Thr Arg Val Gln His Ala Ser Pro Ala Gly Thr
          165          170          175

Tyr Ala His Thr Val Asn Arg Asn Trp Tyr Ser Asp Ala Asp Val Pro
          180          185          190

Ala Ser Ala Arg Gln Glu Gly Cys Gln Asp Ile Ala Thr Gln Leu Ile
          195          200          205

Ser Asn Met Asp Ile Asp Val Ile Leu Gly Gly Gly Arg Lys Tyr Met
210          215          220

Phe Pro Met Gly Thr Pro Asp Pro Glu Tyr Pro Asp Asp Tyr Ser Gln
225          230          235          240

Gly Gly Thr Arg Leu Asp Gly Lys Asn Leu Val Gln Glu Trp Leu Ala
          245          250          255

Lys Arg Gln Gly Ala Arg Tyr Val Trp Asn Arg Thr Glu Leu Met Gln
          260          265          270

Ala Ser Leu Asp Pro Ser Val Thr His Leu Met Gly Leu Phe Glu Pro
          275          280          285

Gly Asp Met Lys Tyr Glu Ile His Arg Asp Ser Thr Leu Asp Pro Ser
290          295          300

Leu Met Glu Met Thr Glu Ala Ala Leu Arg Leu Leu Ser Arg Asn Pro
305          310          315          320

Arg Gly Phe Phe Leu Phe Val Glu Gly Gly Arg Ile Asp His Gly His
          325          330          335

His Glu Ser Arg Ala Tyr Arg Ala Leu Thr Glu Thr Ile Met Phe Asp
          340          345          350

Asp Ala Ile Glu Arg Ala Gly Gln Leu Thr Ser Glu Glu Asp Thr Leu
          355          360          365

Ser Leu Val Thr Ala Asp His Ser His Val Phe Ser Phe Gly Gly Tyr
370          375          380

Pro Leu Arg Gly Ser Ser Ile Phe Gly Leu Ala Pro Gly Lys Ala Arg
385          390          395          400

Asp Arg Lys Ala Tyr Thr Val Leu Leu Tyr Gly Asn Gly Pro Gly Tyr
          405          410          415

Val Leu Lys Asp Gly Ala Arg Pro Asp Val Thr Glu Ser Glu Ser Gly
          420          425          430

Ser Pro Glu Tyr Arg Gln Gln Ser Ala Val Pro Leu Asp Glu Glu Thr
          435          440          445

His Ala Gly Glu Asp Val Ala Val Phe Ala Arg Gly Pro Gln Ala His
          450          455          460

Leu Val His Gly Val Gln Glu Gln Thr Phe Ile Ala His Val Met Ala
465          470          475          480

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Phe	Ala	Ala	Cys	Leu	Glu	Pro	Tyr	Thr	Ala	Cys	Asp	Leu	Ala	Pro	Pro
				485					490					495	
Ala	Gly	Thr	Thr	Asp	Ala	Ala	His	Pro	Gly	Asn	Tyr	Glu	Val	Glu	Pro
			500					505					510		
Arg	Arg	Ala	Leu	Tyr	Val	Glu	Gly	Glu	Arg	Gly	Phe	Phe	Tyr	Thr	Pro
		515					520					525			
Lys	Ala	Leu	Tyr	Leu	Val	Glu	Gly	Glu	Arg	Gly	Phe	Phe	Tyr	Thr	Ser
	530					535					540				
Leu	Met	Thr	Ile	Ala	Tyr	Val	Met	Ala	Ala	Ile	Cys	Ala	Leu	Phe	Met
545					550					555					560
Leu	Pro	Leu	Cys	Leu	Met	Val	Asp	Tyr	Lys	Asp	Asp	Asp	Asp	Lys	
			565						570					575	

<210> 129
 <211> 5
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: synthetic
 peptide sequence

<400> 129
 Lys Met Asp Ala Glu
 1 5

<210> 130
 <211> 5
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: synthetic
 peptide sequence

<400> 130
 Gly Arg Arg Gly Ser
 1 5

<210> 131
 <211> 10
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: synthetic
 peptide sequence

<400> 131
 Val Glu Ala Asn Tyr Glu Val Glu Gly Glu
 1 5 10

<210> 132
 <211> 10

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 132
Val Glu Ala Asn Tyr Ala Val Glu Gly Glu
1 5 10

<210> 133
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 133
Lys Thr Ile Asn Leu Glu Val Glu Pro Ser
1 5 10

<210> 134
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<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

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<221> MOD_RES
<222> (5)
<223> Nle

<400> 134
Lys Thr Ile Asn Xaa Glu Val Glu Pro Ser
1 5 10

<210> 135
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<221> MOD_RES
<222> (5)
<223> Nle

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 135
Lys Thr Ile Asn Xaa Glu Val Asp Pro Ser

1 5 10

<210> 136
<211> 10
<212> PRT
<213> Artificial Sequence

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<223> Nle

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 136
Lys Thr Ile Asn Xaa Asp Val Asp Pro Ser
1 5 10

<210> 137
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 137
Lys Thr Ile Ser Leu Asp Val Glu Pro Ser
1 5 10

<210> 138
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 138
Lys Thr Ile Ser Leu Asp Val Asp Pro Ser
1 5 10

<210> 139
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 139
Lys Met Asp Ala
1

<210> 140
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 140
Ser Tyr Glu Val
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<210> 141
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 141
Ser Glu Val Ser Tyr Glu Val Glu Phe Arg
1 5 10

<210> 142
<211> 4
<212> PRT
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<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 142
Asn Leu Asp Ala
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<210> 143
<211> 10
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<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 143
Ser Glu Val Ser Tyr Asp Ala Glu Phe Arg
1 5 10

<210> 144
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic

peptide sequence

<400> 144

Ser Glu Val Ser Tyr Glu Ala Glu Phe Arg
1 5 10

<210> 145

<211> 25

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 145

Thr Arg Pro Gly Ser Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser
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Glu Val Ser Tyr Glu Val Glu Phe Arg
20 25

<210> 146

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 146

Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Val Ser Tyr Glu
1 5 10 15

Val Glu Phe Arg
20

<210> 147

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 147

Lys Thr Glu Glu Ile Ser Glu Val Ser Tyr Glu Val Glu Phe Arg
1 5 10 15

<210> 148

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 148

Thr Glu Val Ser Tyr Glu Val Glu Phe Arg
1 5 10

<210> 149

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 149

Ser Glu Val Asp Tyr Glu Val Glu Phe Arg
1 5 10

<210> 150

<211> 10

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 150

Thr Glu Val Asp Tyr Glu Val Glu Phe Arg
1 5 10

<210> 151

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 151

Thr Glu Ile Asp Tyr Glu Val Glu Phe Arg
1 5 10

<210> 152

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 152

Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg
1 5 10

<210> 153

<211> 10

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 153
Ser Glu Ile Asp Tyr Glu Val Glu Phe Arg
1 5 10

<210> 154
<211> 13
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<220>
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<222> (11)
<223> Xaa=tryptophan

<220>
<223> Description of Artificial Sequence: synthetic
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<400> 154
Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys
1 5 10

<210> 155
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<221> SITE
<222> (16)
<223> Xaa=tryptophan

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 155
Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa
1 5 10 15

Lys Lys

<210> 156
<211> 23
<212> PRT
<213> Artificial Sequence

<220>
<221> SITE
<222> (21)
<223> Xaa=tryptophan

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 156

Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu Val
1 5 10 15

Glu Phe Arg Xaa Lys Lys
20

<210> 157

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<220>

<221> SITE

<222> (26)

<223> Xaa=tryptophan

<400> 157

Thr Arg Pro Gly Ser Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser
1 5 10 15

Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys
20 25

<210> 158

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<221> SITE

<222> (11)

<223> Xaa=tryptophan

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 158

Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys
1 5 10

<210> 159

<211> 18

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: synthetic
peptide sequence

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<222> (16)

<223> Xaa=tryptophan

<400> 159

Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg
1 5 10 15

Xaa Lys Lys

<210> 160

<211> 23

<212> PRT

<213> Artificial Sequence

<220>

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<222> (21)

<223> Xaa=tryptophan

<220>

<223> Description of Artificial Sequence: synthetic
peptide

<400> 160

Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr
1 5 10 15

Glu Val Glu Phe Arg Xaa Lys Lys
20

<210> 161

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<221> SITE

<222> (26)

<223> Xaa=tryptophan

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 161

Thr Arg Pro Gly Ser Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile
1 5 10 15

Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys
20 25

<210> 162

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<221> SITE

<222> (11)
<223> Xaa=oregon green

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 162
Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys
1 5 10

<210> 163
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<221> SITE
<222> (16)
<223> Xaa=oregon green

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 163
Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa
1 5 10 15

Lys Lys

<210> 164
<211> 23
<212> PRT
<213> Artificial Sequence

<220>
<221> SITE
<222> (21)
<223> Xaa=oregon green

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 164
Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu
1 5 10 15

Val Glu Phe Arg Xaa Lys Lys
20

<210> 165
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<221> SITE

<222> (26)

<223> Xaa=oregon green

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 165

Thr Arg Pro Gly Ser Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser
1 5 10 15

Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys
20 25

<210> 166

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<221> SITE

<222> (11)

<223> Xaa=oregon green

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 166

Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys
1 5 10

<210> 167

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<221> SITE

<222> (16)

<223> Xaa=oregon green

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 167

Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg
1 5 10 15

Xaa Lys Lys

<210> 168

<211> 23

<212> PRT

<213> Artificial Sequence

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<221> SITE
<222> (21)
<223> Xaa=oregon green

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 168
Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr
1 5 10 15

Glu Val Glu Phe Arg Xaa Lys Lys
20

<210> 169
<211> 28
<212> PRT
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<220>
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<223> Xaa=oregon green

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 169
Thr Arg Pro Gly Ser Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile
1 5 10 15

Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys
20 25

<210> 170
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 170
Ser Glu Val Asn Tyr Glu Val Glu Phe Arg
1 5 10

<210> 171
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
primer for site-directed mutagenesis of APP

<400> 171
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<210> 172
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
primer for site-directed mutagenesis of APP

<400> 172
tgagtcatgt cggaattcta cttcataact aatttcagag atctcctc 48

<210> 173
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
primer for site-directed mutagenesis of APP

<400> 173
gagatctctg aaagtagtta tgaagtagaa ttccgacatg actcagg 47

<210> 174
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
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primer for site-directed mutagenesis of APP

<400> 174
tgagtcatgt cggaattcta cttcataact actttcagag atctcctc 48

<210> 175
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<212> DNA
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<220>
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primer for site-directed mutagenesis of APP

<400> 175
gagatctctg aaattagtta tgaagcagaa ttccgacatg actcagg 47

<210> 176
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
primer for site-directed mutagenesis of APP

<400> 176
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<210> 177
<211> 5
<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 177

Val Ser Tyr Glu Val
1 5

<210> 178

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 178

Val Ser Tyr Asp Ala
1 5

<210> 179

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 179

Ile Ser Tyr Glu Val
1 5

<210> 180

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 180

Val Lys Met Asp Ala
1 5

<210> 181

<211> 47

<212> DNA

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<223> Description of Artificial Sequence: synthetic primer for generating mutant construct named MBPC125-SYEV

<400> 181
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<210> 182
<211> 48
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<220>
<223> Description of Artificial Sequence: synthetic
primer for generating mutant construct named
MBPC125-SYEV

<400> 182
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<210> 183
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<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 183
Lys Lys Ser Tyr Glu Val
1 5

<210> 184
<211> 10
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<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 184
Val Glu Ala Asn Tyr Glu Val Glu Gly Glu
1 5 10

<210> 185
<211> 10
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<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 185
Val Glu Ala Asn Tyr Ala Val Glu Gly Glu
1 5 10

<210> 186
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<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 186

Asp Tyr Lys Asp Asp Asp Asp Lys
1 5

<210> 187

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 187

Ser Tyr Glu Ala
1

<210> 188

<211> 4

<212> PRT

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<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 188

Ser Tyr Ala Val
1

<210> 189

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 189

Val Ser Tyr Glu Ala
1 5

<210> 190

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<213> Artificial sequence

<220>

<223> Description of artificial sequence: synthetic peptide sequence

<400> 190

Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Trp Lys Lys
1 5 10

<210> 191

<211> 23

<212> PRT

<213> Artificial sequence

<220>

<223> Description of artificial sequence: synthetic peptide sequence

<400> 191

Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu
1 5 10 15

Val Glu Phe Arg Trp Lys Lys
20

<210> 192

<211> 15

<212> PRT

<213> Artificial sequence

<220>

<223> Description of artificial sequence: synthetic peptide sequence

<220>

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<222> (1)..(1)

<223> amino acid at position 1 is biotinylated

<220>

<221> SITE

<222> (14)..(14)

<223> cys at position 14 is derivatized with an oregon green

<400> 192

Lys Glu Ile Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Lys Lys
1 5 10 15

<210> 193

<211> 22

<212> PRT

<213> Artificial sequence

<220>

<223> Description of artificial sequence: synthetic peptide sequence

<220>

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<222> (1)..(1)

<223> amino acid at position 1 is biotinylated

<220>

<221> SITE

<222> (21)..(21)

<223> cys at position 21 is derivatized with an oregon green

<400> 193

Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu
1 5 10 15

Val Glu Phe Arg Lys Lys
 20

<210> 194

<211> 6806

<212> DNA

<213> Artificial sequence

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<223> Description of artificial sequence: synthetic DNA sequence

<400> 194

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<213> Artificial sequence

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<223> Description of artificial sequence: synthetic peptide sequence

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<221> MOD_RES

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<223> ACETYLTATION (MCA)

<220>

<221> SITE

<222> (11)..(11)

<223> 2,4-dinitrophenyl group after the Lys at position 11

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<222> (4)..(4)

<223> amino acid at position 4 has been derivatized with a statine

<400> 196

Ser	Glu	Val	Asn	Val	Ala	Glu	Phe	Arg	Gly	Gly	Cys
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<210> 197

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<213> synthetic peptide sequence

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<221> SITE

<222> (4)..(4)

<223> amino acid at position 4 has been derivatized with a statine

<220>

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<221> SITE

<222> (10)..(10)

<223> amino acid at position 10 has been derivatized with Bodipy FL

<400> 197

Ser	Glu	Val	Asn	Val	Ala	Glu	Phe	Arg	Cys
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